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nerves accompanying the cœliac axis and the superior and inferior mesenteric arteries are then carefully severed, a rise of blood pressure taken from the carotid must be mainly due to contraction of the splanchnic area which is now denervated. If a vigorous cat is operated upon in this way under light urethane anesthesia, asphyxia for one minute will result usually in a rise of blood pressure at the end of forty seconds and a very considerably greater rise as soon as respiration begins again. These results do not occur if the adrenal glands are removed. If these glands are left in the body, but disconnected from the central nervous system, a rise of pressure may still be produced if the asphyxia is continued for a considerably longer period than is required when the splanchnic nerves are intact.

If the heart is completely denervated by severing both vagi in the neck and removing both stellate ganglia, it becomes a very delicate indicator of increased adrenin in the blood. Stimulation of the central end of the cut sciatic nerve (in a cat under urethane) will then cause the heart rate to increase, in some instances 50 beats a minute. The phenomenon does not occur if the adrenal glands are removed or if the splanchnic nerves are cut. The method is advantageous in that it shows the latent period and the duration of the secretion. The effect on the heart of asphyxia is not so great as the effect of afferent stimulation, in all probability because of the antagonism between the influence of carbon dioxide and of adrenin.

A great deal of care must be taken in operating on the abdominal cavity to avoid manipulation. As was shown many years ago, such operations produce changes which can be best accounted for by continuous discharge of the nerve impulses along splanchnic courses. Thus the adrenal glands would be persistently stimulated. A potent source of error in previous work, in which the abdominal cavity has been opened, has doubtless been the failure to exercise extreme care to avoid rough manipulation.

A full account of this investigation will be

published in the *American Journal of Physiology*.  
W. B. CANNON

## SOCIETIES AND ACADEMIES

### THE BIOLOGICAL SOCIETY OF WASHINGTON

THE 567th regular meeting of the society was held in the assembly hall of the Cosmos Club, Saturday, March 10, 1917, called to order by President Hay at 8 P.M., with 45 persons in attendance.

On recommendation of the council Mrs. L. O. Howard and Dr. Martha Brewer Lyon were elected to active membership.

Under the heading book notices, brief notes, etc., Dr. H. M. Smith exhibited a manuscript and hand-illustrated book dealing with beetles. It was about 60 years old. Dr. Smith presented it to Dr. L. O. Howard. Professor W. P. Hay presented some notes on the flying squirrels of this vicinity with observations on their habits and behavior as pets. Dr. H. E. Ames called attention to a newspaper clipping recording the flight of two tagged ducks a distance of 2,000 miles in about 60 hours. He sought verification of the statement.

The regular program consisted of two communications:

*Precipitins*: M. W. LYON, JR.

Dr. Lyon described an anti-beef serum he had lately prepared, and set up a series of test tubes containing dilutions of beef, sheep, hog and human serums, and demonstrated the action of the anti-beef serum on these, viz., specific precipitation when added to the diluted beef serum, group precipitation with diluted sheep serum, and the non-precipitation with diluted hog and human serums. He mentioned briefly the history and theory of precipitating serums and explained their use in identifying suspected animal proteins and in showing the blood relations of various animals. In discussing this communication A. H. Jennings explained how he had made use of the precipitin reaction in determining the kinds of animals bitten by biting flies. Dr. George W. Field and H. F. Taylor also took part in the discussion.

*Porpoises and Steamers*: WILLIAM PALMER.

Mr. Palmer commented on the frequency with which porpoises are found about the bows of steamers and advanced explanations as to their presence there and methods of progression. His communication was illustrated by diagrams and lantern views of porpoises and other cetaceans. It was discussed by Dr. H. E. Ames.

M. W. LYON, JR.,  
Recording Secretary